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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

TRUONG, CAM Y T

ART UNIT	PAPER NUMBER
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2162

DATE MAILED: 04/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

1. Applicant has amended claims 1, 3, 6, 13, 18, 19, 20, 23 and canceled claims 2, 22, 26-27 in the amendment filed 1/24/2005. Claims 1, 3-21, 23-25 are pending in this Office Action.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Attorney Edward J. Grundler. Reg. No. 47,615 on 3/2/2005

In the claims:

Please replace original claims 1, 6, 13, 18, 19 and 20 with amended claims 1, 6, 13, 18, 19 and 20 and cancel claims 9-11.

1. (Currently amended) A method of automatically invalidating data cached in a cache system physically separate from a data server configured to originate data to be cache system, the method comprising:

at a cache system physically separate from a data server configured to originate data to be cached in the cache system, caching a first data item received from the data server for service in response to request to view said first data item;

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receiving at the cache system a change request from a client to alter a data item;

comparing said change request to a set of rules for determining when to automatically invalidate said first data item;

identifying a relationship between a second data item and a first data item, wherein said identifying a relationship comprises comparing a pattern of said first request to a first rule for determining when to automatically invalidate a set of data, wherein said first rule comprises a first pattern for identifying a request in response to which a set of data may be automatically invalidated, and further comprises a second pattern, different from said first pattern, to identify said set of data to be automatically invalidated; and

automatically invalidating said first data item at the cache system in response to said change request.

6. (Currently amended) A method of operating a cache system to facilitate automatic invalidation of cached data, the method being performed at the cache system and comprising:

at a cache system physically separate from a data server configured to originate data to be cached in the cached system, caching a first set of data received from the data server;

receiving at the cache system a first request from a client to change a second set of data;

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retrieving from said first request an identifier of said second set of data;
comparing said first request to a set of rules for determining when to
automatically invalidate said first set of data;
identifying a relationship between said second set of data and said first set of
data, wherein said identifying a relationship comprises comparing a pattern of
said first request to a first rule for determining when to automatically invalidate
a set of data, where said first rule comprises a first pattern for identifying a
request in response to which a set of data may be automatically invalidated,
and further comprises a second pattern, different from said first pattern, to
identify said set of data to be automatically invalidated;
automatically invalidating said first set of data in the cache system without
awaiting an invalidating communication from the data server.

13. (Currently amended) A method of automatically invalidating cached data,
comprising:
at a cache system physically separate from a data server configured to
originate data to be cached in the cache system, caching a first set of data at
a caching system for serving in response to a view request, wherein said view
request comprises a request to view said first set of data, and wherein said
first set of data is received from a data server;
receiving at the caching system a change request from a client, wherein said
change request comprises a request to change said first set of data;

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identifying said first set of data from said change request;
identifying a relationship between a second data item and a first data item,
wherein said identifying a relationship comprises comparing a pattern of said
first request to a first rule for determining when to automatically invalidate a
set of data, wherein said first rule comprises a first pattern for identifying a
request in response to which a set of data may be automatically invalidated,
and further comprises a second pattern, different from said first pattern, to
identify said set of data to be automatically invalidated;
comparing said change request to a set of rules for determining when to
automatically invalidate said first set of data;
automatically invalidating said cached first set of data without waiting for the
data server to implement said change request, wherein invalidating said
cached first set of data is in response to the view request.

18. (Currently Amended) A computer readable storage medium storing
instructions that, when executed by a computing device, cause the computing
device to perform a method of operating a cache system to facilitate
automatic invalidation of cached data, the method being performed at the
cache system and comprising:

at a cache system physically separate from a data server configured to originate data to be cached in the cache system, caching a first set of data received from the data server;

receiving at the cache system a first request from a client to change a second set of data;

retrieving from said first request an identifier of said second set of data;

comparing said change request to a set of rules for determining when to automatically invalidate said first set of data;

identifying a relationship between said second set of data and said first set of data, wherein said identifying a relationship comprises comparing a pattern of said first request to a first rule for determining when to automatically invalidate a set of data, where said first rule comprises a first pattern for identifying a request in response to which a set of data may be automatically invalidated, and further comprises a second pattern, different from said first pattern, to identify said set of data to be automatically invalidated;

automatically invalidating said first set of data in the cache system without awaiting an invalidation communication from the data server.

19. (Currently Amended) A computer readable storage medium storing instructions that, when executed by a computing device to perform a method of automatically invalidating cached data, the method comprising:

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at a cache system physically separate from a data server configured to originate data to be cached in the cache system, caching a first set of data at a caching system for serving in response to a view request, wherein said view request comprises a request to view said first set of data, and wherein said first set of data is received from a data server;

receiving at the caching system a change request from a client, wherein said change request comprises a request to change said first set of data;

identifying said first set of data from said change request;

comparing said change request to a set of rules for determining when to automatically invalidate said first set of data;

identifying a relationship between a second set of data and said first set of data, wherein said identifying a relationship comprises comparing a pattern of said first request to a first rule for determining when to automatically invalidate a set of data, where said first rule comprises a first pattern for identifying a request in response to which a set of data may be automatically invalidated, and further comprises a second pattern, different from said first pattern, to identify said set of data to be automatically invalidated;

automatically invalidating said cached first set of data without for the data server to implement said change request, wherein invalidating said cached first set of data is in response to the view request.

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20. (Currently Amended) A cache system configured to automatically invalidate cached data, comprising:

- a first cache configured to cache data received from a data server, wherein said first cache is separate from said data server, and wherein the data server is coupled to the cache system via a network link;
- a data service module configured to server a first set of cached data in response to a first data view request from a client;
- a set of rules for determining when said first set of cached data is to be automatically invalidated in response to a data change request;
- a comparing module for comparing said first data change request to the set of rules for determining when to automatically invalidate said first set of cached data;
- identifying a relationship between a second set of data and said first set of data, wherein said identifying a relationship comprises comparing a pattern of said first request to a first rule for determining when to automatically invalidate a set of data, where said first rule comprises a first pattern for identifying a request in response to which a set of data may be automatically invalidated, and further comprises a second pattern, different from said first pattern, to identify said set of data to be automatically invalidated;
- an invalidation module configured to automatically invalidate said first set of cached data when a first data change request is received from a client;

wherein said automatic invalidation is performed at the cache system before the data server is notified of said first data change request.

Allowable Subject Matter

3. Claims 1, 3-5, 6-8, 12-25 are allowed.

The prior art of record, alone or in combination, does not teach or fairly suggest the combination of steps as recited in independent claims 1, 6, 13, 18, 19 and 20, wherein "a comparing module for comparing said first data change request to the set of rules for determining when to automatically invalidate said first set of cached data; where said first rule comprises a first pattern for identifying a request in response to which a set of data may be automatically invalidated, and further comprises a second pattern, different from said first pattern, to identify said set of data to be automatically invalidated; at a cache system physically separate from a data server configured to originate data to be cached in the cached system".

The dependent claims, bring definite, further limiting, and fully enabled by the specification are also allowed.

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Contact Information

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cam Y T Truong whose telephone number is (571) 272-4042. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Cam-Y Truong
3/2/2005



4/8/5

MOHAMMAD ALI
PRIMARY EXAMINER